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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SCHECHTER, ANDREW M	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/642,803	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	Andrew Schechter	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,20-26 and 33-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,20-26 and 33-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/573,314.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/11/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claims 1 and 23 are objected to because of the following informalities: "a common electrode" in line 8 should be "the common electrode". Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 38-42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 26-30 of U.S. Patent No.

6,630,977 in view of *Hiroshi,* U.S. Patent No. 5,995,186. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reason.

Claim 38 recites "wherein the pixel electrode partly overlaps the common electrode with the oxide film interposed therebetween", which claim 26 does not. Claim 26 does recite "a capacitor comprising the common electrode, the oxide film, and the pixel electrode"; it would have been obvious to one of ordinary skill in the art at the time of the invention to have this capacitor as shown in *Hiroshi,* with the pixel electrode overlapping the common electrode as recited, to form the capacitor (motivated by the desire to have a well-controlled capacitance by making a conventionally shaped capacitor). Claim 38 is therefore unpatentable over claim 26, and claims 39-42 are exactly analogous to claims 27-30.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 21, 33, 35, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by *Hirakata et al.,* U.S. Patent No. 5,977,562.

[The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.]

Hirakata discloses [see Figs. 9 and 10] a semiconductor device comprising a pair of substrates [201, 211], at least one thin film transistor [101, etc.] over one of the pair of substrates, an insulating layer [205] over the thin film transistor; a common electrode [322] over the insulating layer; an insulating film [206] on the common electrode; a pixel electrode [321] on the insulating film and connected to the thin film transistor [note that the pixel electrode, insulating film, and common electrode are shown in the opposite order in Fig. 10, but *Hirakata* gives explicit fruition to the claimed order in col. 9, lines 11-14]; a capacitor formed by the common electrode, the insulating film, and the pixel electrode; wherein an electric field parallel to the face of the substrate is applied between the pixel electrode and the common electrode. Claim 1 is therefore anticipated.

The insulating layer [205] is a leveling layer, and the pixel electrode partly overlaps the common electrode with the insulating film interposed therebetween, so claim 33 is also anticipated. There is a liquid crystal layer, so claims 21 and 35 are also anticipated. It is an IPS display device, so claim 37 is also anticipated.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 20-22, and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sakamoto et al.,* U.S. Patent Application Publication 2002/0024627 in view of *Hiroshi,* U.S. Patent No. 5,995,186.

[*Sakamoto* has a date of 29 July 1999, which is after the date of the applicant's priority document, 20 May 1999. This rejection might therefore be overcome with the submission of a certified translation of the applicant's priority document.]

Sakamoto discloses [see Fig. 1, for instance] a semiconductor device comprising a pair of substrates [101, 131], at least one thin film transistor [105, etc.] over one of the pair of substrates, an insulating layer [108] over the thin film transistor; a common electrode [103] over the insulating layer; an insulating film [112] on the common electrode; a pixel electrode [114] on the insulating film and connected to the thin film transistor; wherein an electric field parallel to the face of the substrate is applied between the pixel electrode and the common electrode.

Sakamoto does not necessarily disclose a "capacitor" as recited. *Sakamoto's* common electrode, insulating film, and pixel electrode do technically constitute a capacitor, in that charge can be stored therein by applying a voltage difference. In this

case *Sakamoto* would anticipate claim 1. However, they do not overlap in the traditional planar fashion, so it might be argued that they are not "a capacitor" as a combined entity, but merely electrodes near each other. The examiner assumes this latter interpretation is intended. If the applicants disagree, they should bring it to the attention of the examiner (since claim 33 has the explicit limitation that they partly overlap, there is reason to suspect that the applicants might be intending to use the former interpretation). The examiner would appreciate the applicants being explicit on this point in their reply.

Hiroshi does disclose [see Fig. 5, for instance] in an analogous device, having the pixel electrode, insulating film, and common electrode overlap to form a traditional planar capacitor. It would have been obvious to one of ordinary skill in the art at the time of the invention to do so in the device of *Sakamoto*, motivated by *Hiroshi's* teaching that this supports an electric charge (voltage) for each pixel [col. 5, lines 57-61], allows a larger and better-controlled capacitance, longer holding times, and a better display quality. Claim 1 is therefore unpatentable.

Sakamoto's common electrode is made of aluminum [paragraph 0060], which can be anodically oxidized, so claim 20 is also unpatentable. There is a liquid crystal layer [140] between the substrates, so claim 21 is also unpatentable. The use of the above-described LCD in such electronic equipment as projectors, cameras, personal computers, etc. is well-known and conventional in the industry (of which the examiner takes official notice), and it would be obvious to one of ordinary skill in the art to do so,

motivated among other reasons by the desire to incorporate the LCD technology in particular consumer devices, so claim 22 is unpatentable as well.

Considering the additional limitations of claim 33, *Sakamoto*'s insulating layer [108] is a leveling layer [see Fig. 2D], and as modified by *Hiroshi* the pixel electrode partly overlaps the common electrode with the insulating film interposed therebetween. Claim 33 is therefore also unpatentable. Claims 34-36 are analogous to claims 20-22, so they are also unpatentable. The device is an IPS display device, so claim 37 is also unpatentable.

9. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sakamoto et al.,* U.S. Patent Application Publication 2002/0024627 in view of *Hiroshi,* U.S. Patent No. 5,995,186 as applied above, and further in view of *Asada et al.,* U.S. Patent No. 5,745,207.

Claim 23 adds the limitation that the common electrode and pixel electrode have a zig-zag shape. *Sakamoto* does not disclose this. *Asada* does disclose this [see Fig. 4, for instance]. It would have been obvious to one of ordinary skill in the art at the time of the invention to do so in the device of *Sakamoto*, motivated by *Asada's* teaching that this compensates [improves] the coloring of image corresponding to angle of view due to the movement of the orientation of the liquid crystal molecules, improving the display quality [see abstract]. Claim 23 is therefore unpatentable.

Claims 24-26 are analogous to claims 20-22, so they are also unpatentable.

10. Claims 22 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hirakata et al.,* U.S. Patent No. 5,977,562 as applied above.

[The applied reference has a common inventor or assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).]

Hirakata does not disclose particular products using its device. The use of the above-described LCD in such electronic equipment as projectors, cameras, personal computers, etc. is well-known and conventional in the industry (of which the examiner takes official notice), and it would be obvious to one of ordinary skill in the art to do so, motivated among other reasons by the desire to incorporate the LCD technology in particular consumer devices, so claims 22 and 36 are unpatentable as well.

11. Claims 20 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hirakata et al.,* U.S. Patent No. 5,977,562 as applied above, in view of *Asada et al.,* U.S. Patent No. 5,745,207.

[The applied reference has a common inventor or assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).]

Hirakata does not disclose the material of the common electrode. *Asada* discloses using aluminum for an analogous electrode [col. 5, line 24], which can be anodically oxidized. It would have been obvious to one of ordinary skill in the art at the

time of the invention to use Al, motivated by it being easily manipulated and commonly used to form such electrodes, resulting in manufacturing savings over using other less familiar materials. Claims 20 and 34 are therefore unpatentable.

Election/Restrictions

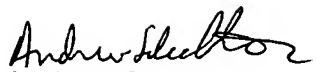
12. Applicant's election without traverse of Group I, claims 1 and 20-26 and newly added claims 33-42, in the reply filed on 12 October 2004 is acknowledged.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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22 December 2004